APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,820	08/30/2000	David S. Miller	PA876	2273

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Patents Department
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EXAMINER
D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 08/05/2003

/0

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2003* .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6)☐ Other: .

DETAILED ACTION

Response to Arguments

Applicant's arguments, see amendment, filed 7-15-03, with respect to the rejection(s)of claim(s) 1-5 under USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. **However, upon further consideration, a new ground(s) of rejection is made in view of Siwiak et al. US 5,432,521 or Dent US 5,742,908 or Ishikawa et al. US 5,613,193.**

1. New Figure #9 has been provided which depicts a "method" and <u>overcomes</u> the drawing objection.

2. For claims 1-5, the examiner provides three pieces of prior art which teach an oscillator/clock that can be modified/controlled and reads on that portion of claim 1 which Siwiak is silent on.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

<u>**Claims 1 and 3-5**</u> rejected under 35 U.S.C. 103(a) as being unpatentable over Siwiak US Patent 5,640,166 in view of Sickles, II US Patent 3,940,695 ***and [Siwiak et al. US 5,432,521 or Dent US 5,742,908 or Ishikawa et al. US 5,613,193]***. (hereafter Siwiak and Sickles ***and Siwiak#2 or Dent or Ishikawa***).

As per **claim 1**, Siwiak teaches an apparatus for frequency correction in a wireless communication system, wherein transmissions within the system experience a Doppler effect (Title), comprising:

A first frequency synthesizer for generating a carrier signal oscillating at a rate responsive to a first input (figure 2, #222),

Wherein said rate input adjusts over time according to a predetermined sequence so that said Doppler compensation signal compensates for said Doppler effect (Claim 2, Col. 6, L44-53 states that the circuit contains a memory for storing a plurality of Doppler compensation values for minimizing Doppler frequency shifts at a plurality of predetermined points which reads on the applicant's specification which states that a memory can be used to supply the desired sequence of values for <u>rate input</u> and <u>initial value</u>, Page 10, L13-15).

But is silent on

A counter coupled to said first input for generating a Doppler compensation signal, said counter having a clock input

A second frequency synthesizer coupled to said clock input for generating a clock signal oscillating at a rate responsive to a rate input

Sickles teaches the use of an up/down counter (figure 1, #34) in a Doppler correction system (title) where the output of the up/down counter is a digital signal indicative of the instantaneous contents of the counter (C3, L3-8).

Sickles also teaches the use of a clock (being connected to the up/down counter) as shown in figure 1, #38. The output of the counter eventually connects to a mixer (#86) and modulator/second synthesizer (#88). While Siwiak does not teach a clock circuit, it is evident that the overall design operates in a similar manner to that of the applicant's since data is received, the Doppler controller compensates for Doppler shift which is provided to the synthesizer and signal generator which connect to the downlink transceiver (ref. signal path in figure 2, right side of page).

With regard a clock being used that is connected to other hardware and generates a clock signal oscillating at a rate responsive to a rate input, Siwiak#2 (figure 2, #210/#220 and figure 4, #200) or Dent (figure 2, #214) or Ishikawa (figure 9, #49) each teach a similar design (eg. controllable oscillator/clock) for Doppler compensation.

It would have been obvious to one skilled in the art at the time of the invention to modify Siwiak, such that a counter and second synthesizer are used, to provide an accurate measurement/count of the Doppler offset and to provide a second synthesizer that can be optimized for it's specific function (eg. its optimal frequency range is highly precise in the operational range(s) required).

As per **claim 3**, Siwiak teaches an system for frequency correcting transmissions between first and second transceivers in a wireless communication system to minimize Doppler frequency effects (title) comprising:

Carrier generating means in the first transceiver for generating a carrier signal oscillating at a rate responsive to a ***Doppler compensation signal*** (figure 2, #228)

Doppler compensation means coupled to said carrier generating means for generating a ***said*** Doppler compensation signal (figure 2, #216)

Rate input means coupled to said clock generating means ***for adjusting said rate input*** and adjustable over time according to a predetermined sequence so that said Doppler compensation signal compensates for said Doppler effect (Claim 2, Col. 6, L44-53 states that the circuit contains a memory for storing a plurality of Doppler compensation values for minimizing Doppler frequency shifts at a plurality of predetermined points which reads on the applicant's specification which states that a memory can be used to supply the desired sequence of values for rate input and initial value, Page 10, L13-15). .

But is silent on Clock generating means coupled to a clock input of said Doppler compensation means for generating a clock signal oscillating at a rate responsive to ***rate input*** a predetermined rate.

Sickles also teaches the use of a clock (being connected to the up/down counter) as shown in figure 1, #38. While Siwiak does not teach a clock circuit, it is evident that the overall design operates in a similar manner to that of the applicant's since data is received, the Doppler controller compensates for Doppler shift which is provided to the synthesizer and signal generator which connect to the downlink transceiver (ref. signal path in figure 2, right side of page).

It would have been obvious to one skilled in the art at the time of the invention to modify Siwiak, such that the clock is coupled to the Doppler compensation means and generates a clock signal oscillating at a rate responsive to a predetermined rate, to provide means for the system to quickly calculate/determine and correct for Doppler shifts.

As per **claim 4**, Siwiak teaches claim 3 wherein the wireless system comprises a satellite communication system (title) including an earth-based gateway incorporating the first transceiver (figure 2, left side of page), satellite incorporating the second transceiver (figure 2, right side of page) and a user terminal (figure 2, bottom left side of page)

As per **claim 5**, Siwiak teaches a method for frequency correction of Doppler effects in a wireless communications system (title) comprising:

Generating a carrier signal oscillating at a rate responsive to a ***Doppler compensation signal*** first input (figure 6, #624)

Generating a ***said*** Doppler compensation signal ***based on a clock signal*** (figure 6, #608, #614 and #618)

Adjusting said rate input over time according to a predetermined sequence so that said Doppler compensation signal compensates for said Doppler effect (Claim 2, Col. 6, L44-53 states that the circuit contains a memory for storing a plurality of Doppler compensation values for minimizing Doppler frequency shifts at a plurality of predetermined points which reads on the applicant's specification which states that a memory can be used to supply the desired sequence of values for rate input and initial value, Page 10, L13-15). .

But is silent on Generating a ***said*** clock signal oscillating at a rate responsive to a rate input.

Sickles also teaches the use of a clock (being connected to the up/down counter) as shown in figure 1, #38. While Siwiak does not teach a clock circuit, it is evident that the overall design operates in a similar manner to that of the applicant's since data is received, the Doppler controller compensates for Doppler shift which is provided to the synthesizer and signal generator which connect to the downlink transceiver (ref. signal path in figure 2, right side of page).

It would have been obvious to one skilled in the art at the time of the invention to modify Siwiak, such that the clock oscillates at a rate responsive to a rate input, to provide means for the system to quickly calculate/determine and correct Doppler shifts.

Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over

Siwiak/Sickles further in view of Jensen et al. US Patent 5,745,072 (hereafter Jensen).

As per **claim 2**, Siwiak teaches claim 1 wherein the wireless system comprises a satellite communication system (title) including an earth-based gateway (figure 2, left side of page), satellite (figure 2, right side of page) and a user terminal (figure 2, bottom left side of page)
But is silent on said frequency correction apparatus is located at said earth based gateway.
Jensen teaches a Doppler extractor located at the ground station (Figure 1).
It would have been obvious to one skilled in the art at the time of the invention to modify Siwiak, such that the frequency correction apparatus is located at said earth based gateway, to provide Doppler compensation means both on the ground and in the air.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-

306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bill Trost can be reached on 703-308-5318. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9314 for

regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-306-

0377.

SMD
July 28, 2003

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
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